

DAIDBEKOVA, E.A.; KURBANOVA, F.M.

Lithofacies characteristics of sediments in the producing formation  
of the lower Kura Valley in connection with their oil potential.  
Azerb. neft. khoz. 38 no.8:13-15 Ag '59. (MIRA 13:2)  
(Kura Valley--Petroleum geology)

DAIDBEKOVA, E.A.

Mineral and geochemical facies of sediments in the flysch formation  
of the southeastern Caucasus. Trudy AzNII DN no.9:44-53 '60.  
(Caucasus--Flysch) (MIRA 14:5)

DAIDBEKOVA, E.A.; POKIDIN, A.K.

Lithological and thermographic characteristics of carbonate rocks  
in the southeastern Caucasus. Trudy AzNII DN no.10:122-130 '60.  
(MIRA 14:4)

(Caucasus--Rocks, Carbonate)

DAIDBEKOVA, E. A., Doc GEOL ~~AND~~ MIN ~~SCI~~ SCI, "PETROGRAPHY  
OF THE FLYSCH FORMATION OF <sup>the</sup> SOUTHEASTERN CAUCASUS." BAKU,  
1961. (JOINT COUNCIL OF AZERBAYDZHAN INST OF PETROLEUM  
AND CHEM IMENI M. AZIZBEKOV AND INSTITUTES AND INSTITUTIONS  
OF ACAD SCI AZSSR FOR GEOL AND MINERAL SCIENCES). (KL-DV,  
11-61, 212).

DAIDBEKOVA, E.A., ~~IBRAGIMOVA~~, B.M.

Hydrotroilite in deposits of the akchagyl stage in the Kura Lowland.  
Dokl. AN SSSR 137 no.3:678-680 Mr '61. (MIRA 14:2)

1. Azerbayzhanskiy nauchno-issledovatel'skiy institut po dobyshe  
nefti. Predstavleno akademikom N.M.Strakhovym.  
(Kura Lowland--Hydrotroilite)

DAIDBEKOVA, E.A.; POKIDIN, A.K.; ISMAYLOVA, R.S.

Mineralogy of clays of Cretaceous sediments of the southeastern  
Caucasus. *Biul.MOIP.Otd.geol.* 36 no.6:37-48 N-D '61.  
(Caucasus---Clay) (MIRA 15:7)

DAIDBEKOVA, E.A.; BABAYEVA, R.S.; GRIGOR'YANTS, Z.G.; KURBANOVA, F.M.;  
IBRAGIMOVA, B.M.; SHAMAILOVA, O.D.

Granulometric types of rocks and allothigene minerals. Trudy  
GIN no.115:29-67 '65. (MIRA 18:12)

DAIEV, Khr.

S/075/60/015/004/013/030/XX  
B020/B064

AUTHORS: Yordanov, N. and Daiyev, Khr.  
TITLE: Photometric Determination of Cerium by Means of o-Tolidine  
PERIODICAL: Zhurnal analiticheskoy khimii, 1960, Vol. 15, No. 4.  
pp. 443 - 445

TEXT: The present paper describes a new, unpublished method for a more selective and accurate determination of tetravalent cerium with o-tolidine (3,3'-dimethyl benzidine); the qualitative reaction has been known since long, but has hitherto not been used for quantitative cerium determination. Cerium was separated from the disturbing components together with the rare earths in the form of oxalates. If there are no rare earths present in the analyzed material, lanthanum nitrate is added, and the oxalates are precipitated. A 12 mg/ml  $\text{La}(\text{NO}_3)_3$  solution was used in the experiments

Since the lanthanum nitrate available contained approximately 0.14% Ce, it was purified by the method of V. M. Klinayev and N. N. Senyavin (Ref. 12). The optical density of the solution was measured with a photoelectric

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Photometric Determination of Cerium by Means of o-Tolidine S/075/60/015/004/013/030/XX  
B020/B064

colorimeter of the type ФЭК-М (FEK-M) with a blue filter (permeability maximum at 410 mμ). Fig. 1 shows that the solutions follow the Beer law at concentrations up to 3 γ Ce/ml. The molar extinction coefficient is approximately 9500. The reaction with o-tolidine is 20 times as sensitive as with H<sub>2</sub>O<sub>2</sub>. The coloring produced remained stable for several hours under the chosen conditions, and vanished only on the following day. The yellow color remains unchanged for 20 minutes after the addition of the reagent; then it fades gradually (Fig. 2). A change of pH between 0 and 4 has no appreciable effect upon the sensitivity of the reagent. When using 12 mg of La(NO<sub>3</sub>)<sub>3</sub> as a collector, the coprecipitation of 10 - 200 γ Ce proceeds quantitatively. Table 1 shows the reproducibility of the method, which is mainly due to the quantitative conversion of Ce<sup>III</sup> to Ce<sup>IV</sup>, and also the stability of the oxidation products of o-tolidine. The effect of Fe, Al, Mn, and Ti in amounts of Ce:Fe = 1:10,000, Ce:Al=1:3,000, Ce:Mn=1:350, and Ce:Ti=1:100 was studied for the purpose of using this method for cerium determination in minerals and rocks. Fig. 1 shows the calibration curve used to determine cerium by means of o-tolidine. The time dependence of the optical density is illustrated in Fig. 2. Table 2

Card 2/3

Photometric Determination of Cerium by Means  
of o-Tolidine

S/075/60/015/004/013/030/XX  
B020/B064

shows that under the above conditions, the coprecipitation of cerium proceeds practically quantitatively, that even in the presence of comparatively large iron and aluminum quantities, no soluble cerium oxalate complexes of these elements are formed, and that in the precipitation of both hydroxides and oxalates, no coprecipitation of manganese takes place in the presence of hydroxylamine hydrochloride. The fact that a number of elements is not coprecipitated with lanthanum oxalate, is also related to the separation of the latter in acid media. Thorium, yttrium, neodymium, praseodymium, ytterbium, terbium, and samarium have no disturbing effect. The method described was used to determine the cerium content in apatite, titanite, and monzonite (Table 3). There are 2 figures, 3 tables, and 12 references: 6 Soviet, 5 German, and 1 British

ASSOCIATION: Sofiyskiy gosudarstvennyy universitet (Bolgariya) (Sofiya  
State University (Bulgaria))

SUBMITTED: July 9, 1959

Card 3/3

IORDANOV, N.; DAIXEV, Khr.

Separation of small amounts of rare earth elements from minerals and rocks by chlorination with carbon tetrachloride.  
Zhur.anal.khim. 17 no.4:429-431 J1 '62. (MIRA 15:8)

1. Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Sofia.  
(Rare earths--Analysis) (Carbon tetrachloride)

ICHIDANOV, N.; DAIYEV, Kh. [Daiev, Kh.]

The N, N, N', N' tetramethyl o-tolidine (Tetron) as reagent in determining small quantities of oxidants (Au (III), Ce (IV), BrO<sub>3</sub> etc.) Doklady BAN 16 no.1:69-72 '63.

1. Predstavleno chl.-korr. N. Penchevym.

JORDANOV, N.; DAIEV, Yhr.

Distribution of cerium and amount of rare-earth elements in certain effusive, intrusive, and metamorphic rocks in southern Bulgaria. Doklady BAN 17 no. 1:19-53 '64

1. Predstavleno chlenom-korrespondentom N. I. Penchevym.

DAIKHES, A. I.

Professor Il'ia Mironovich Burakov; on his 70th birthday. Vest.  
otorin. no.2:123 '62. (MIRA 15:2)

(BURAKOV, IL'IA MIRONOVICH, 1891..)

RUBIN, S.S.; DAILEVSKIY, A.E.; IL'CHENKO, V.A.; KARASYUK, I.M.

Methods of studying the root systems of agricultural plants.  
Bot. zhur. 47 no.8:1176-1184 Ag '62. (MIRA 15:10)

1. Umanskiy sel'skokhozyaystvennyy institut imeni A.M. Gor'kogo.

DAILIDONIENE, Jadvyga; KAFINSKIENE, L., red.

[Tuberculosis, an infectious disease] Tuberkulioze -  
uzkrečiama liga. Vilnius, Valstybine politines ir  
mokslines lit-ros leid kla, 1963. 16 p. [In Lithuanian]  
(MIRA 17:7)



DAILIDOMIENE, J.

Tuberculosis morbidity in the Republic according to fluorographic data. Sveik. apsaug. 9 no.3:36-39 M<sup>r</sup>'64

1. Respublikinio tuberkuliozes dispanserio vyr. gydytoja.

\*

DAILIDONIENE, J.

Tuberculosis morbidity in the Republic according to fluorographic data. Sveik. Apsaug. no.3:36-39 '64.

1. Lietuvos respublikinio tuberkuliozes dispanserio vyr. gydytoja.

DAIMACA, Victor, prof.

Celestial phenomena in December 1961. Gaz mat fiz 13 no.10:559-560

1961

(Mechanics, Celestial)

DAIMACA, Victor, prof.

Data on celestial phenomena in February 1962. Gaz rat fiz 13 no.12:  
663-664 D '61.

DAIMACA, Victor, prof.

Celestial phenomena of March 1962. Gaz mat fiz 14 no.1:54-55 Ja '62.

DAIMACA, Victor,, prof.

Celestial phenomena of April 1962. Gaz mat fiz 14, no.2:110-111 F '62

DAIMACA, Victor, prof.

Celestial phenomena in May 162. Gaz mat fiz 14 no. 3:167-168. Mr '62

DAIMACA, Victor, prof.

The celestial phenomena in June 1962. Gaz mat fiz 14 no.4:  
220-221 Ap '62.



DAIMACA, Victor, prof.

The celestial phenomena in July 1962. Gaz mat fiz 14 no.5:  
279-280 My '62.

DAIMACA, Victor, prof.

Celestial phenomena in the month of August, 1962. Gaz mat fiz  
14 no.6:333-334 Je '62.

DAIMACA, Victor, prof.

Celestial phenomena in September 1962. Gaz mat fiz 14 no.7:  
391-392 JI '62.

DAIMACA, Victor, prof.

Celestial phenomena in October 1962. Gaz mat fiz  
14 no.8:445-446 Ag '62.

DAIMACA, Victor, prof.

Celestial phenomenon in November 1962. Gaz mat fiz 14 no.9:503-504  
S '62.

DAIMACA, Victor, prof.

Celestial phenomena in December 1962. Gaz mat fiz 14 no.10:559-560  
0 '62.

DAIMAGA, Victor, prof.

Celestial phenomena in January and February 1963. Gaz mat fiz 14  
no.11/12:653-655 N-D '62.

DAIMACA, Victor, prof.

Celestial phenomena in March 1963. Gaz mat fiz 15 no.1:55-56  
Ja '63.



DAIMACA, Victor, prof.

Celestial phenomena in April 1963. Gaz mat fiz 15 no.2,110-111 F  
'63.

DAIMACA, Victor, prof.

Celestial phenomena in May 1963. Gaz mat fiz 15 no.3:166-167  
Mr '63.

DAMCA, Victor, prof.

Astronomical data. Gaz ant fiz 15 no.4:21-222 Ap '63.

DAIMACA, Victor, prof.

Celestial phenomena in July 1963. Gaz mat fiz 15 no.5:277-278  
Ky '63.

DAIMAGA, Victor, prof.

Celestial phenomena in August 1963. Gaz mat fiz 15 no.6:  
335-336 Je '63.

DAIMACA, Victor, prof.

Celestial phenomena in September 1963. Gaz mat fiz 15 no.7:390-391 JI '63.

DAIMACA, Victor, prof.

Celestial phenomena in November 1963. Gaz mat fiz 15 no. 9:504-  
505 S '63.

DAIMACA, Victor, prof.

Celestial phenomena in December 1963. Gaz mat fiz 15  
no.10:558-559 0'63.



DAIMACA, Victor, prof.

Celestial phenomena in October 1963. Gaz mat fiz 15  
no. 8: 447-478 Ag '63.

DAIMACA, Victor, prof.

Celestial phenomena in January 1964. Gaz mat fiz 15 no.11:  
667-668 N '63.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 15 no.12:724, 725 1963.

DAIMACA, Victor, prof.

Planetary phenomena in May 1964. Gaz mat fiz 69 no. 4:  
156-157 Ap '64.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 69 no. 5:197 My '64.

DAIMACA. Victor, prof.

Planetary phenomena during July 1964. 042 741 113 69  
no.6:231-232 Je'64.

DAIMACA, Victor

Planetary phenomena in August 1964. Gaz mat fiz 67 no. 7:  
278 J1 '64.

LAIMACA, Vistor, prof.

Astronomical data. Gaz. nat fiz 69 no.2319 4g'rd.



WILSON, Victor, prof. (Bucharest.)

Planetary phenomena in 1964. General Fiz. 64.1.19. 4p. 12.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 69 no.9:360 S '64.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 69 no.10:400-401 0 '64.

DAIMACA, Victor, prof. (Bucuresti)

Astronomical data. Gaz mat fiz 69 no.11:439-440 N '64.

DAIMACA, Victor, prof.

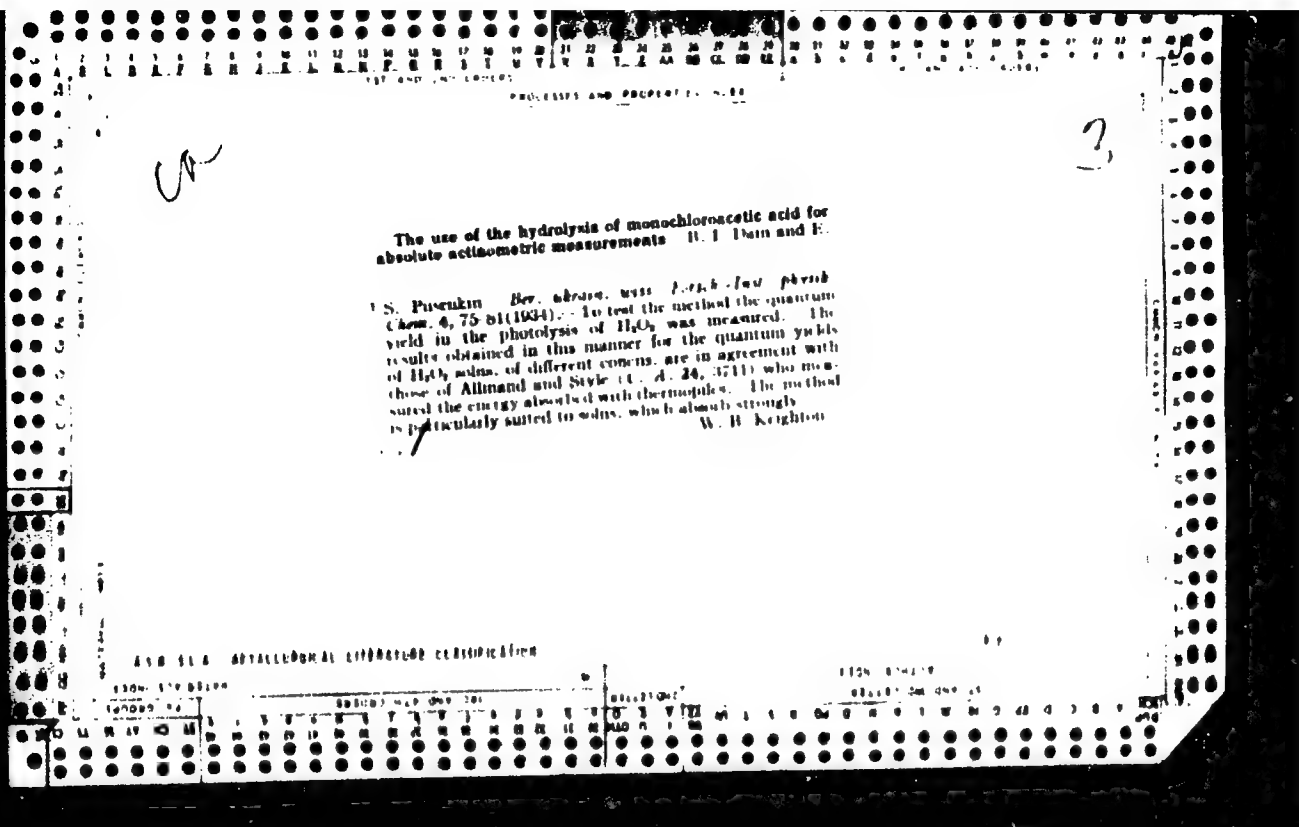
Astronomical data. Gaz mat fiz 70 no.2:75 F '65.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 70 no.4:159 Ap '65.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 70 no.3:119 Mr '65.





CA

3

The action of inhibitors in the photochemical decomposition of hydrogen peroxide. H. Dain and A. Shvarts. *Acta Physicochim. U. R. S. S. R.* 3, 201 (1957) (in English); *J. Phys. Chem. (U. S. S. R.)* 7, No. 2 (1956) (in Russian). On the basis of data previously published (*J. Phys. Chem. (U. S. S. R.)* 4, 478 (1954)) D. and S. conclude that the photochem. decomn. of  $H_2O_2$  goes by way of  $HO$  radicals and is defined by the rate equation  $-d[H_2O_2]/dt = k_1[H_2O_2]^{1/2}$ . By a study of the decomn. of pure  $H_2O_2$  and of  $H_2O_2$  with from  $1 \times 10^{-3}$  up to  $2 \times 10^{-2}$  moles added ketone per l. it was found that the rate of decomn. of  $H_2O_2$  at 75° illuminated by light from a Hg-vapor lamp is reduced to 1% by  $91 \times 10^{-3}$ ,  $20 \times 10^{-3}$  and  $26 \times 10^{-3}$  moles per l. resp. of  $Me_2CO$ ,  $MeCOEt$  and  $Et_2CO$ . The correction for internal absorption of light by ketone was never over 5%. The ratios  $k_2 = V_i/V_0$  for the velocities of inhibited and uninhibited reaction are linear functions of the ketone concn. The energy of activation for reaction of hydroxyl with a ketone is of the order 25-30 Cal. D. and S. assume that only primary OH reacts with the ketone, leading to a decrease in the initial no. of chains rather than to breaking of chains already initiated.

F. H. Rathmann

AND TO A DETAILING LITERATURE CLASSIFICATION

Method of spectral analysis of complicated mixtures  
B. Ya. Dain, I. V. Granovskii and E. S. Puzenkin  
Izv. Akad. Nauk SSSR, 1961, 2, 1015. Standards for  
the quantitative spectroscopic analysis of the systems Al<sub>2</sub>O<sub>3</sub>-  
and the effect of temperature on the calibration of Na, K,  
Ba, Al. Standard analysis of mixtures on the standards  
are indicated.

CO

7

Qualitative spectral analysis of manganese ores. B. Ya. Dain, I. V. Granovskii and E. S. Puzenkin. *Rev. Inst. physik. Chem. Akad. Wiss. Ukr. S. S. R.* 5, 267-73 (1960); cf. C. A. 30, 9009. Tabulated measurements of wave lengths in the green ultraviolet portion of the arc spectrum show that Fe can be identified by the lines of 3141.1, 3130.4, 2620.9, 2620.4 Å., 2 lines of higher wave lengths being covered by Mn-lines; Ti lines of 3372.6, 3249.4 Å. are not obscured by Mn or Fe. After elimination of Fe by the Rote method Co is identified by the line of 5296.5 Å. and Ni by the lines of 5478.9, 5081.1, 4711.4, 3619.4, 3521.5, 3515.1, 3414.8, 3389.6 Å. Elimination of Mn as MnO<sub>3</sub> permits the identification of Cr and Mo.

J. G. Tolpin

ASB-31.4 METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND INDEX

PROCESSIES AND PROPERTIES INDEX

3RD AND 4TH INDEX

CC

6-1

Effect of negative catalysts on thermal decomposition of hydrogen peroxide in solution.  
 H. J. DAIN and K. M. KRATIN (J. Phys. Chem. Russ., 1930, 8, 896-903).—The rate of unimol. decomp. of  $H_2O_2$  in absence of a catalyst is decreased by  $PhOH > CO_2 > COMe > MeOH > COMe$ .  
 J. J. B.

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND INDEX

3RD AND 4TH INDEX

5TH AND 6TH INDEX

7TH AND 8TH INDEX

9TH AND 10TH INDEX

11TH AND 12TH INDEX

13TH AND 14TH INDEX

15TH AND 16TH INDEX

17TH AND 18TH INDEX

19TH AND 20TH INDEX

21ST AND 22ND INDEX

23RD AND 24TH INDEX

25TH AND 26TH INDEX

27TH AND 28TH INDEX

29TH AND 30TH INDEX

31ST AND 32ND INDEX

33RD AND 34TH INDEX

35TH AND 36TH INDEX

37TH AND 38TH INDEX

39TH AND 40TH INDEX

41ST AND 42ND INDEX

43RD AND 44TH INDEX

45TH AND 46TH INDEX

47TH AND 48TH INDEX

49TH AND 50TH INDEX

51ST AND 52ND INDEX

53RD AND 54TH INDEX

55TH AND 56TH INDEX

57TH AND 58TH INDEX

59TH AND 60TH INDEX

61ST AND 62ND INDEX

63RD AND 64TH INDEX

65TH AND 66TH INDEX

67TH AND 68TH INDEX

69TH AND 70TH INDEX

71ST AND 72ND INDEX

73RD AND 74TH INDEX

75TH AND 76TH INDEX

77TH AND 78TH INDEX

79TH AND 80TH INDEX

81ST AND 82ND INDEX

83RD AND 84TH INDEX

85TH AND 86TH INDEX

87TH AND 88TH INDEX

89TH AND 90TH INDEX

91ST AND 92ND INDEX

93RD AND 94TH INDEX

95TH AND 96TH INDEX

97TH AND 98TH INDEX

99TH AND 100TH INDEX

BC

A.1

**Auto-oxidation of oxalates, and so-called active oxalic acid. B. DAIN, V. BABUTYENKO, and A.**

SCHWABE (Acta Physicochim. U.R.S.S., 1938, 9, 640-664).—The photochemical auto-oxidation of  $H_2C_2O_4$  and oxalates in absence of the ions of heavy metals is very slight but is increased by the addition of mineral acids. In the dark, auto-oxidation occurs in presence of  $Mn^{2+}$ , peroxide formation increasing with increase in  $[Mn^{2+}]$  or  $p_H$ . The reaction is characterised by an induction period which is shortened by increasing  $[Mn^{2+}]$  or  $p_H$ . The oxidation is discussed on the basis of chain reactions, and also in relation to the activated  $H_2C_2O_4$  observed in photochemical experiments with Eder's solution.

C. R. H.

ASAC-51A METALLURGICAL LITERATURE CLASSIFICATION

3

C-4

Role of catalyst in the photochemical oxidation of oxalates. B. Ya. Dain and L. F. Kutsava. *Rev. Phys. Chem. USSR* 1960, 34, 133, 134. The effect of Mn<sup>2+</sup> on the yield of H<sub>2</sub>O<sub>2</sub> in the photochem. oxidation of oxalates was studied with mixts. contg. 0.015 mol/l. of K<sub>2</sub>C<sub>2</sub>O<sub>4</sub>, 0.077 mol/l. of H<sub>2</sub>SO<sub>4</sub>, and up to 0.15 mol/l. of MnSO<sub>4</sub>. For concns. of MnSO<sub>4</sub> up to 0.015 mol/l. the yield increases but with further addn. the yield drops and reaches zero. The concn. of H<sup>+</sup> in the soln. has an analogous effect. From pH 5 to 4.8 the yield increases and further on it drops. Results are interpreted. B. Z. K.

ASB SLA METALLURGICAL LITERATURE CLASSIFICATION

Czech Elements		Processes and Properties		3	
<p>Volumetric photogalvanic effect in solutions of electrolytes. 1. Photogalvanic effect of oxalates. B. Va Dala and A. M. Zolotare. <i>Ber. Pismajensky Inst. physik Chem., Akad. Wiss. Ukr. S. S. R.</i> 12, 83 97 (1940).</p> <p>A photogalvanic effect was observed on smooth Pt and Pt-black electrodes in a soln. of <math>K_2C_2O_4</math>. It is shown that the effect is due to the photochem. process taking place in the vol. of the electrolyte and is dependent of the wave length. The effect is explained on the basis of the temporary disturbance of the ionic equil. in the soln.</p> <p>B. Z. Kamich</p>					
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>					
<p>110001 110002 110003 110004 110005 110006 110007 110008 110009 110010 110011 110012 110013 110014 110015 110016 110017 110018 110019 110020 110021 110022 110023 110024 110025 110026 110027 110028 110029 110030 110031 110032 110033 110034 110035 110036 110037 110038 110039 110040 110041 110042 110043 110044 110045 110046 110047 110048 110049 110050 110051 110052 110053 110054 110055 110056 110057 110058 110059 110060 110061 110062 110063 110064 110065 110066 110067 110068 110069 110070 110071 110072 110073 110074 110075 110076 110077 110078 110079 110080 110081 110082 110083 110084 110085 110086 110087 110088 110089 110090 110091 110092 110093 110094 110095 110096 110097 110098 110099 110100 110101 110102 110103 110104 110105 110106 110107 110108 110109 110110 110111 110112 110113 110114 110115 110116 110117 110118 110119 110120 110121 110122 110123 110124 110125 110126 110127 110128 110129 110130 110131 110132 110133 110134 110135 110136 110137 110138 110139 110140 110141 110142 110143 110144 110145 110146 110147 110148 110149 110150 110151 110152 110153 110154 110155 110156 110157 110158 110159 110160 110161 110162 110163 110164 110165 110166 110167 110168 110169 110170 110171 110172 110173 110174 110175 110176 110177 110178 110179 110180 110181 110182 110183 110184 110185 110186 110187 110188 110189 110190 110191 110192 110193 110194 110195 110196 110197 110198 110199 110200 110201 110202 110203 110204 110205 110206 110207 110208 110209 110210 110211 110212 110213 110214 110215 110216 110217 110218 110219 110220 110221 110222 110223 110224 110225 110226 110227 110228 110229 110230 110231 110232 110233 110234 110235 110236 110237 110238 110239 110240 110241 110242 110243 110244 110245 110246 110247 110248 110249 110250 110251 110252 110253 110254 110255 110256 110257 110258 110259 110260 110261 110262 110263 110264 110265 110266 110267 110268 110269 110270 110271 110272 110273 110274 110275 110276 110277 110278 110279 110280 110281 110282 110283 110284 110285 110286 110287 110288 110289 110290 110291 110292 110293 110294 110295 110296 110297 110298 110299 110300 110301 110302 110303 110304 110305 110306 110307 110308 110309 110310 110311 110312 110313 110314 110315 110316 110317 110318 110319 110320 110321 110322 110323 110324 110325 110326 110327 110328 110329 110330 110331 110332 110333 110334 110335 110336 110337 110338 110339 110340 110341 110342 110343 110344 110345 110346 110347 110348 110349 110350 110351 110352 110353 110354 110355 110356 110357 110358 110359 110360 110361 110362 110363 110364 110365 110366 110367 110368 110369 110370 110371 110372 110373 110374 110375 110376 110377 110378 110379 110380 110381 110382 110383 110384 110385 110386 110387 110388 110389 110390 110391 110392 110393 110394 110395 110396 110397 110398 110399 110400 110401 110402 110403 110404 110405 110406 110407 110408 110409 110410 110411 110412 110413 110414 110415 110416 110417 110418 110419 110420 110421 110422 110423 110424 110425 110426 110427 110428 110429 110430 110431 110432 110433 110434 110435 110436 110437 110438 110439 110440 110441 110442 110443 110444 110445 110446 110447 110448 110449 110450 110451 110452 110453 110454 110455 110456 110457 110458 110459 110460 110461 110462 110463 110464 110465 110466 110467 110468 110469 110470 110471 110472 110473 110474 110475 110476 110477 110478 110479 110480 110481 110482 110483 110484 110485 110486 110487 110488 110489 110490 110491 110492 110493 110494 110495 110496 110497 110498 110499 110500 110501 110502 110503 110504 110505 110506 110507 110508 110509 110510 110511 110512 110513 110514 110515 110516 110517 110518 110519 110520 110521 110522 110523 110524 110525 110526 110527 110528 110529 110530 110531 110532 110533 110534 110535 1105</p>					

CA

Photochemical reaction in the region of electron affinity spectrum of chromous ions in solution. H. Ya. Bala and I. Liberman. *Compt rend acad sci U.S.S.R.* 20, 228, 30(1940)(in English).— The absorption band of ferrous ion at about 2800 Å. has been interpreted by Potterill, Walker and Weiss (C. A. 30, 8021\*) as the electron-affinity spectrum and the primary photochem. reaction as the splitting off of an electron. H. and I. have carried out an investigation to see if a similar phenomenon occurs in the near-ultraviolet absorption of chromous ion. The reaction was followed by the rate of H<sub>2</sub> evolution. By use of appropriate filters it was shown that only the near ultraviolet caused the evolution of H<sub>2</sub>. In a 0.1 M soln., to which acid was added, the reaction begins after the fortieth min., and proceeds at a const. rate; the apparent induction period is due to the satn. of the soln. with H before evolution, and the rate of evolution scarcely changes with a change in temp. from 17° to 50°. The rate const. at 17° is 0.0401 and at 50° is 0.0404. The reaction is quite simple and if it does not take place in one step, the secondary step requires no considerable activation. For this reason the splitting off of the electron as the primary process seems most probable. J. P. McReynolds.

ASD 514 METALLURGICAL LITERATURE CLASSIFICATION



The problem of the mechanism of decomposition of sodium hypochlorite. T. S. Glikman and B. Ya. Dain.  
J. Gen. Chem. (U. S. S. R.) 11, 100-6 (1941).—The  
decompn. of NaClO goes in two directions: (1) with evolution of O<sub>2</sub>:  $2\text{ClO}^- \rightarrow 2\text{Cl}^- + \text{O}_2$ , and (2) with formation of chlorate:  $\text{ClO}^- \rightarrow \text{ClO}_2^- + 2\text{Cl}^-$ . The removal of the heterogeneous admixts. changes the direction of the kinetic curve of the evolution of O<sub>2</sub>. The curve attains an autocatalytic character. Filters of different porosity were used for the filtration. The purer solns. were more stable. A NaClO soln. made from very pure chemicals proved to be very stable. The catalyst increases the decompn. of NaClO in both directions, but it is less noticeable in the reaction with formation of chlorates. The investigation leads to the assumption that both directions of the decompn. of NaClO are based on the same primary process.

S. Machelson  
11 references.

CA

3

Electron affinity spectra of dissolved positive ions. H. Ya. Dain, B. P. Kutsaya and R. A. Liberman. *Doklady Akad. Nauk U. R. S. S. R., Physico-Chem. and Math. Sci. Sect. 1962, No. 1-2, 43-4* (in Russian, 43, in English, 45). —The position of the long wave limit of the spectrum for  $\text{Ce}^{+}$  as well as  $\text{Fe}^{+}$  ions coincides with the work of breaking away of the electron from the dissolved ion. The primary act in both cases is an electronic transition taking place within the complex of the ion-hydrated shell. J. S. J.

ASAC-51.4 METALLURGICAL LITERATURE CLASSIFICATION

DAIN, B. Ya; KUTSAYA, B. F.; LIBERZON, E. A.

Inst of Physical Chemistry imeni L. V. Pisarzhevskiy, Acad. of Sci. (-1941-)

"Reactions in the Spectrums of Electron Affinity of Ions of Divalent Chromium and Iron." Zhur. Fiz. Khim., Vol. 17, No. 4, 1943

BR-52059419

PROCESS AND PROPERTIES INDEX	
<p>CH</p> <p>Electron-affinity spectrum of chromous ions. B. Ya. Dain and R. Liberman. <i>Acta Physicochim. U.R.S.S.</i> 19, 410-20(1944); cf. C.A. 38, 1954. The long-wave limit of the absorption band of <math>\text{CrSO}_4</math> is at 3500 Å. Changes in <math>\text{H}^+</math> concn. do not change the spectrum, which is ascribed to hydrated <math>\text{Cr}^{++}</math> ions and represents an electron-affinity spectrum of <math>\text{Cr}^{++}</math>. This interpretation is confirmed by the photochem. data. The <math>\text{H}_2</math> evolved on irradiation of <math>\text{CrSO}_4</math> by ultraviolet light, measured in a microburet, is increased only 1.8 times by a 40-fold increase in <math>\text{H}^+</math> concn. The addn. of <math>\text{Cr}_2(\text{SO}_4)_3</math> in different amts. does not inhibit the yield of <math>\text{H}_2</math>, i.e., <math>\text{Cr}^{+++}</math> is not reduced by at. <math>\text{H}_2</math>; this explains a greater quantum yield than that obtained for Fe. The quantum efficiency is about 0.41 measured actinometrically with respect to the photolysis of <math>\text{CICH}_2\text{CO}_2\text{H}</math>. Thus <math>\text{H}^+</math> ions do not participate in the process but the electron transfer must occur inside the complex ion-hydration layer, with the formation of a transition state from which <math>\text{H}_2</math> is liberated directly.</p> <p>Janet R. Austin</p>	<p>3</p>
<p>ASH 15.1 METALLURGICAL LITERATURE CLASSIFICATION</p>	

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p>CA</p> <p>3</p> <p>Photochemical reactions in electrolyte solutions II            Ya. Dain. <i>Uspekhi Khim.</i> 15, 530-59 (1946). A critical            review with 50 literature references up to 1943. N 1</p>																			
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			
1ST ORDER										2ND ORDER									
GROUP										SUBGROUP									
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20										21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40									

CA

New data on electronic transport bands in electrolyte solutions. B. Ya. Dain. *Izv. Akad. Nauk S.S.S.R., Ser. Fiz.* 12, 513-18 (1948). Absorption curves were taken on solns. of  $\text{Fe}(\text{ClO}_4)_3$  and  $\text{Cu}(\text{ClO}_4)_2$  in  $\text{H}_2\text{O}$ ,  $\text{EtOH}$ ,  $\text{MeOH}$ ,  $\text{BuOH}$ , and in solns. contg. variable amts. of  $\text{HClO}_4$ . If such acidified solns. are frozen in a vacuum and illuminated with ultraviolet light, a small development of O can be observed as well as formation of  $\text{Fe}^{2+}$  ions from ultraviolet absorption by  $\text{Fe}^{3+}$  ions; it is shown that the photochem. effect takes place on hydrated ions only. The long-wave threshold of the absorption band is shifted toward longer wave lengths in alc. solns. of increasing mol. wt. Photochem. tests in alc. show an increase in H and aldehydes in the solvent upon illumination. S. P.

CA

2

L. V. Pleschetskii Pioneer of electron chemistry  
H. V. Dan. *Dokl. Akad. Nauk SSSR* 17, 508 (1968). R. E. A.

FATH, P. YA.

TA 9/49T9

USSR/Chemistry - Tungstates, Reduction of Jun 48  
Chemistry - Molybdates, Reduction of

"New Data on the Structure of Molybdenum and Tungsten Blue Derivatives," Z. M. Taysberg, B. Ya. Dain, Inst of Phys Chem imeni L. V. Pisarzhevskiy, Acad Sci Ukrainian SSR, 5 3/4 pp

"Zhur Obshch Khim" Vol XVIII(LXXX), No 6 - p.1437

Prepares and investigates absorption spectra of molybdate and tungstate reduction products in presence of phosphorous, silicon, boron and arsenic salts. Compounds have various spectra and can be regarded as derivatives of molybdenum and tungsten blue. Submitted 28 Jan 1947.

9/49T9



Photochemical oxidation-reduction reactions in electrolyte solutions. Absorption spectra of iron perchlorate solutions in ethanol. T. S. Glikman, B. Ya. Dain, and B. F. Kutunaya. *Zhur. Fiz. Khim.* (J. Phys. Chem.) 22, 906-12 (1948).—Aq. 0.008 M  $\text{Fe}(\text{ClO}_4)_3 + 0.5 \text{ M HClO}_4$  has an absorption band with a max. near 240 m $\mu$ ; the absorption reaches a definite small intensity  $i$  at 320 m $\mu$ . When 98% EtOH is substituted for water, the max. remains almost unaffected but the long-wave part of the spectrum is shifted toward red so that the  $i$  is reached at 400 m $\mu$ . Solns. of 0.008 M  $\text{Fe}(\text{ClO}_4)_3 + 0.15 \text{ M HClO}_4$ , and of 0.008 M  $\text{Fe}(\text{ClO}_4)_3 + 0.99 \text{ M HClO}_4$  in 98% EtOH had this  $i$  at 400 m $\mu$  and 300 m $\mu$ , resp., the position of the max. remaining unchanged. The max. corresponds to absorption by solvated ferric ions while the long-wave part of the band is due to products of solvolysis or hydrolysis. In this part, the Lambert-Beer law is not valid. These results are used for elucidating the mechanism of the photochem. reduction of  $\text{Fe}^{3+}$  in the presence of EtOH.

J. J. Bikerman

DAIN, B. YA.

PA 11/49T12

USSR/Chemistry - Spectra, Absorption  
Chemistry - Iron, Ferric

Jul 48

"Nature of the Ultraviolet Bands Adsorbing Tri-  
valent Iron Ions," B. Ya. Dain, A. A. Kachan, Inst  
Phys Chem imeni L. V. Pisarzhevskiy, Acad Sci USSR,  
3½ pp

"Dok Ak Nauk SSSR" Vol LXI, No 3

Reports experiments. Results confirm view that  
spectrum band of  $Fe^{3+}$  ions is an "electron trans-  
fer spectrum." Submitted 24 Apr 48.

11/49T12

AYSBERG, Z.M.; DAIN, B.Ya.

Chemical nature of the derivatives of molybdenum and tungsten blues.  
Dop.AN URSR no.5:33-38 '49. (MIRA 9:9)

1.Institut fizichnoi khimii imeni L.V.Pisarshevs'kogo AN URSR Viddil  
fotokhimii.Predstaviv diyeniy chlen AN URSR O.I.Brods'kiy.  
(Pigments)

DAIN, B. YA

PA 54/49T102

USSR/Physics  
Ions  
Catalysis

Jul 49

"Heterogeneous Phenomena in the Photoreduction Process of Ions in a Tetravalent Series," B. Ya. Dain, A. A. Kachan, Inst of Physicochem, Imeni L. V. Pisarenkovskiy, Acad Sci USSR, 3 3/4 pp

"Dok Ak Nauk SSSR" Vol LXVII, No 1

Experiments cited show that in the photoreduction reaction of a perbromate in a tetravalent series, influence of the walls of the container on the basic process is very great, and is of a clearly catalytic

54/49T102

USSR/Physics (Contd)

Jul 49

nature. Aftereffect is not completely explained, but is connected with the observed catalytic effect. Submitted by Acad A. M. Terenin 3 May 49.

54/49T102

PLAIN, C. (Y.)

*Nonlinear Sci, Alho*  
*V-8 Jan 15, 1954*  
*Biology & Medicine*

CONCERNING THE NATURE OF THE REACTION OF  
CHLOROPHYLL WITH INORGANIC IONS. M. S. Ashkinazi,  
T. S. Chikman, and B. [Ya.] Dahn [Dahn]. [Translated by]  
L. V. Pisarzhevskii [Pisarzhevsky] from Doklady Akad. Nauk  
S.S.S.R. 73, 743-6 (1950). 8p. (UCRL-Trans-90)

④ Chem

L 10311-66 EWT(m) DIAAP

ACC NR: AP5026404

SOURCE CODE: UR/0386/65/002/006/0266/0269

AUTHOR: Dalidchik, F. I.; Savasov, Yu. S. 18  
B

ORG: Institute of Chemical Physics, Academy of Sciences SSSR (Institut khimicheskoy fiziki Akademii nauk SSSR)

TITLE: Exchange effect in elastic scattering of polarized identical nuclei 19

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 6, 1965, 266-269

TOPIC TAGS: elastic scattering, proton polarization, Coulomb interaction

ABSTRACT: In view of the increasing importance of experiments on the polarization of the products of direct nuclear reactions, for the purpose of explaining their concrete mechanism of determining the spectroscopic characteristics of the nuclei, the authors analyze theoretically the elastic scattering of Coulomb-interacting polarized identical particles. It is shown that when a completely polarized beam is scattered by a completely polarized target interference takes place only when the polarizations of the beam and the target coincide. This is the quantum analog of a fact well known in optics, that there is no interference between two light rays which are polarized in mutually perpendicular planes. In the general case it follows from the analysis that the intensity of the oscillations of the exchange term depends essentially on the degree of polarization of the beam and of the target, as illustrated in Fig. 1 for the case of particles with spin  $I = 1$ . This can serve as a basis for a new method of detecting polarization of slow charged particles. Since the procedure for ob-

Card 1/2

L 10311-66

ACC NR: AP5026404

taining polarized targets is being continuously perfected and there are now already twenty different methods for accomplishing this, the proposed method can find application in a large group of experiments, including measurement of polarization of slow protons and of nuclei of light and medium elements, which is of particular importance in connection with the ever increasing use of multiply-charged ions in nuclear physics. Orig. art. has: 1 figure and 4 formulas.

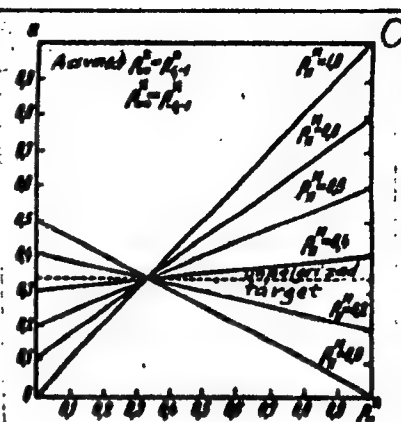
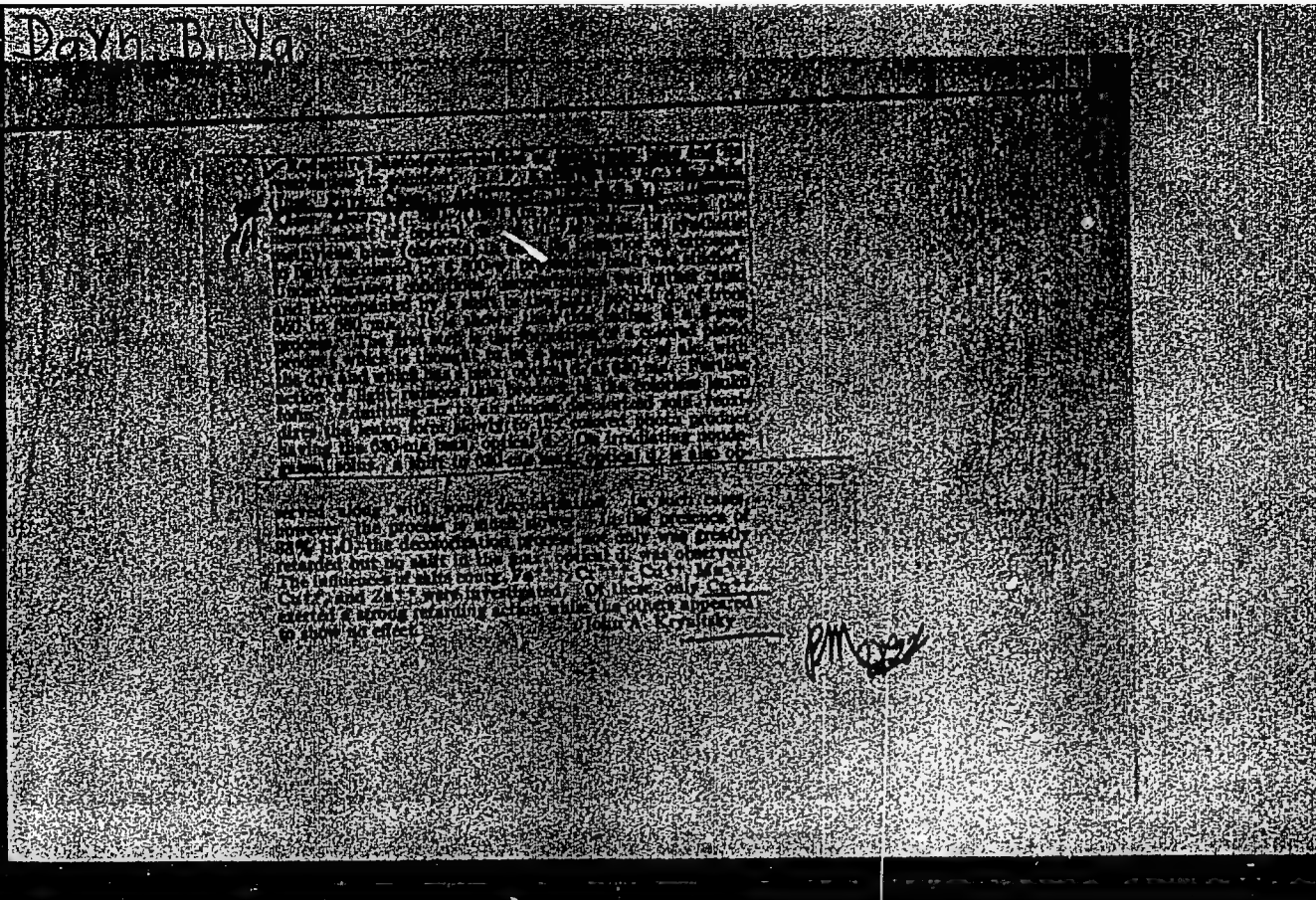


Fig. 1. Oscillation intensity vs. target polarization for particles with spin  $I = 1$ .

SC: 18/ SUBM DATE: 19Jul65/ ORIG REF: 002/ OTH REF: 001

Card 2/4





DAYN, B. Ya.

U.S.S.R.

✓ The chemical nature and structure of the derivatives of molybdenum and tungsten blues. Z. M. Vaisberg and B. Ya. Dayn. *Izvest. Sibirsk. Platiny i Drug. Biogorod. Metal. Akad. Nauk S.S.S.R., Inst. Obshch. i Neorg. Khim.*, No. 26, 164-62 (1951). — By aid of a medium-sized Hilger spectrograph the ultraviolet absorption curves of phosphomolybdic, silicomolybdic, arsenomolybdic, phosphotungstic, silicotungstic, phosphomolybdovanadic (I) acids, and the reduction products thereof, i.e. the various Mo and W blues, were plotted (200-450 mμ), also the compds. were analyzed. The various blues showed only a slight increase in the percentage of the constituents; e.g.: I before and after reduction, resp., contained Mo 60.2 and 60.8, P 1.50 and 1.55, V 2.35 and 2.40%. As the spectral curves are very similar to one another (the absorptions almost always obey Lambert-Beer's law), it is concluded that the original compds. and the blues produced therefrom have very similar structures. Therefore it is proposed to call the blues "heteropoly acids of the reduced series." W. J.

*W. J.*

USSR/Chemistry - Chlorophyll

21 Sep 51

"Photochemical Properties of the Iron-Chlorophyll Complex," M. B. Ashkinazi, B. Ya. Dain, Inst of Phys Chem Imeni Piskarshevskiy, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXX, No 3, pp 385-388

The iron-chlorophyll complex, prepd by chem means in both the oxidized and the reduced form, gives absorption curves with intensity peaks at 610 millimicrons for the oxidized and 645 millimicrons for the reduced form. Upon exposure of the oxidized form to a 1,000 watt lamp, intensity peaks appeared at 640 - 650 millimicrons after 4 hrs of

210731

USSR/Chemistry - Chlorophyll  
(Contd)

21 Sep 51

exposure and at 610 millimicrons after 10 hrs of exposure. Visible light is capable of reducing the oxidized iron-chlorophyll complex as shown by other absorption on curves. The same effect is produced by light from a mercury quartz lamp, only much faster. Temp between 10 - 22° has no effect on photo reduction.

210731

DAIN, B. Ya.

C.A.

**Photochemistry of chlorophyll at liquid-air temperature**  
 A. A. Kachan and B. Ya. Dain (L. V. Pisarzhevskii  
 Phys.-Chem. Inst., Acad. Sci. Ukr. S.S.R., Kiev). *Doklady  
 Akad. Nauk S.S.R.* **80**, 619-22 (1951). - On cooling from  
 room to liquid-air temp., the absorption coeff. in the red  
 absorption band of chlorophyll (a + b) in soln. in EtOH  
 (0.040-0.078 g./l.) increases; prolonged irradiation with  
 visible or with near-ultraviolet light (high-pressure Hg lamp)  
 produces no further changes of absorption. Solns. of  
 chlorophyll in a 1:3 mixt. of EtOH with Et<sub>2</sub>O show the  
 same increase of absorption in the red on cooling to liquid-  
 air temp. In this mixed solvent, irradiation with near ultra-  
 violet at liquid-air temp. produces a decrease of the absorp-  
 tion in the red, which persists on standing in the dark at the  
 liquid-air temp., but disappears on warming up to room  
 temp. The change taking place on ultraviolet irradiation at  
 liquid-air temp. is attributed to dissociation into a pos. chloro-  
 phyll ion and an electron. If one assumes, with Terenin,  
 that the pos. ion splits off a proton, the stability of the  
 system at liquid-air temp. in the mixed EtOH + Et<sub>2</sub>O  
 solvent appears to be due to a fixation of the proton by  
 Et<sub>2</sub>O, in the form of the oxonium ion Et<sub>2</sub>OH<sup>+</sup>. This process  
 does not take place in soln. in EtOH alone. Visible-light  
 quanta are insufficient to produce ionization, and can give  
 rise only to unstable excited states which may interact  
 with the solvent. N. Thon

1. ASHKINAZI, M. S.; GLIKMAN, G. S.; DAYN, B. YA.

2. USSR (600)

4. Iron Salts

7. Nature of the interaction of chlorophyll with iron salts, Ukr. khim. zhur., 17, no. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

DAIN, B. YA.

Chemical Abst.  
Vol. 48 No. 9  
May 10, 1954  
Biological Chemistry

③  
Interaction of chlorophyll with iron salts. <sup>1</sup>Xi. S. Ashkinazi, T. S. Glikman, and B. Ya. Dain. *Ukrain. Khim. Zhur.* 18, 49-54(1952); cf. *C.A.* 45, 12007. —Reiteration of the previous statement that the changes in absorption spectra of chlorophyll on the addn. of  $Fe^{++}$  or  $Fe^{+++}$  are due to complex formation rather than oxidation-reduction phenomena.  
J. P. Danchy

DAIN, B.Ya.

Research of T.D.Grotthus in photochemistry and the theory of colors.  
Ukr.khim.zhur. 20 no.1:93-99 '54. (MLRA 7:3)

1. Institut fizicheskoy khimii im. L.V.Pisarzhevskogo Akademii nauk  
USSR. (Grotthus, Theodor D., 1785-1822)

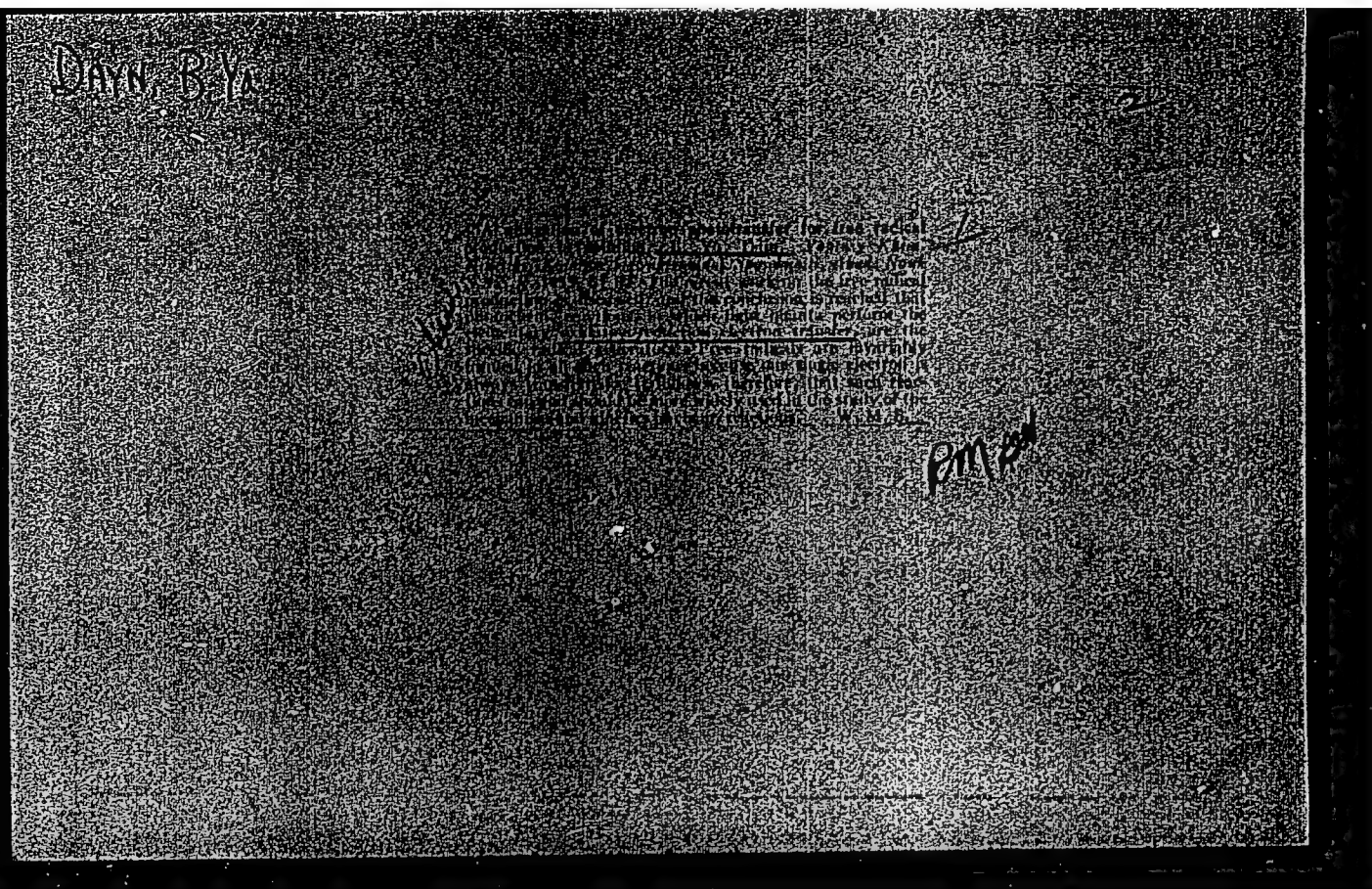
*DAIN, B.YA.*

3

*Dark and photochemical reaction of films of triphenylmethane  
and with oxygen and moisture. [Diluz and B. Ya. Dain  
(Dokl. Akad. Nauk SSSR 1954, 98, 1001-1004). The displacement  
ment between the absorption max. of alcoholic solutions of crystal  
violet and malachite green and their films deposited on glass is  
caused by chemisorption of water vapour on the latter. The  
decoloration of the films by light can be prevented by total  
elimination of chemisorbed oxygen. The significance of these  
observations is discussed. R. C. MURRAY.]*

*Inst. Phys. Chem  
in Piskunovsk*

*UkrSSR*





*DAUN, B. YA.*

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 116 - 8/25

Authors : Kostryukova, E. P.; and <sup>DAUN</sup>Daun, B. Ya.

Title : Photochemical reduction of thionine

Periodical : Ukr. khim. zhur. 21/1, 48-53, 1955

Abstract : The photochemical reduction of a thiazine type dye (thionine), possessing high light sensitivity in the visible zone of the spectrum was investigated during its reaction with ethyl alcohol, thiourea and glucose. It was found that the photochemical reduction reaction of the dye is unavoidably connected with the phototransfer of the hydrogen from the reducing agent to the molecule of the dye. The effect of temperature on the reduction process is explained. Seven references : 4 USSR and 3 USA (1925-1951). Tables; graphs; drawing.

Institution: Acad. of Sc., Ukr. SSR, The L.V.Pisarzhevskiy Institute of Phys. Chemistry

Submitted : February 20, 1954

DAYK, B. Ya

✓ The chemical interaction of iron with phosphorus  
M. B. ARSHAD, J. P. HARRISON, and B. Ya. DAYK  
Dokl. Akad. Nauk SSSR, 201, 10, 1987. Photo-  
phosphorescence studies of phosphorus in iron  
by dissolving in weak phosphoric acid. They can be reversibly  
oxidized and reduced under the quantum effect of visible  
light, similar to Fe<sup>2+</sup> and Fe<sup>3+</sup> (C. A. J. Hoeve). The reduc-  
tion product is unstable in the air and is readily converted  
into the oxidized form with Fe<sup>3+</sup>. The light-absorption  
effect was studied under illumination by a 1000-w. mercury  
detour lamp (with wavelength 400-500 nm). The absorption  
curves in HClO<sub>4</sub>, H<sub>2</sub>SO<sub>4</sub>, and HNO<sub>3</sub> have sharp max. at  
420 nm for the oxidized form and at 445-450 nm for the  
reduced form. The Fe<sup>2+</sup> phosphoride is reduced by  
light (except in the presence of air) and is oxidized by ad-  
mission of air. The processes in alk. (0.1 M) Fe<sup>2+</sup> solutions  
are more complex. A weak max. is observed at 478 nm, but the  
absorption is changed by visible light to a distinct max. at  
440 nm, indicating a reduction. Admission of air results  
in the production of a curve which has the typical shape  
for the oxidized phosphoride. The difference in the shapes  
of the curves in alk. and org. solvents is due to the interac-  
tion of Fe phosphoride with the OH<sup>-</sup> with the production  
of absorption curves in org. solvents similar to those pro-  
duced in alk. water solutions and which are attributed to the  
transfer of OH<sup>-</sup> to the Fe<sup>2+</sup> occupying the central posi-  
tion.

W. M. Sternberg

DAYK, B. Ya

DAIN, B. Ya.

USSR / Physical Chemistry. Molecules, Chemical Bond.

P-4

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 25753

Author : M.S. Ashkinazi, I.P. Gerasimova, B.Ya. Dain.

Inst : Academy of Sciences of USSR

Title : Influence of Water on Absorption Spectrum and Photosensitivity of Iron Pheophorbide.

Orig Pub : Dokl. AN SSSR, 1956, 108, No 4, 655-658

Abstract : The absorption spectra of oxidized pheophorbide a (I) in alcohol, acetone, acetonitrile, chloroform (II), benzene and toluene in the range of 500 to 700 mμ were photographed. It was shown in accordance with earlier found regularities (RZhKhim, 1956, 25216) that the spectrum of carefully dehydrated I is characterized with the maximum absorption in range of 620 to 625 mμ. After an addition of water (III), the spectrum changes sharply, the maximum at 620 to 625 mμ disappears nearly completely and a band at 675 to 680 mμ appears simultaneously. The described effect is displayed in

Card : 1/2

- 13 -

USSR / Physical Chemistry. Molecules. Chemical Bond.

B-4

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 25753

Abstract : various solvents to different degrees depending on the miscibility of the solvent with III. The authors ascribe the absorption at 675 to 680 m $\mu$  to associations consisting of III and I molecules; in the authors' opinion, the formation of associations of molecules of I connected with molecules of III is also possible. It is shown that the reduction of I (appearance of absorption maximum at 650 m $\mu$ ; see above note) under the action of visible light takes place considerably easier in presence of III, in which occasion the spectrum of oxidized I always appears after the inlet of air. The photosensitivity of I in presence of III proves, in the authors' opinion, the specific influence of III not only on the spectra, but also on the photo-chemical behavior of I.

Card : 2/2

- 14 -

1. inst. fizicheskoy Khimii im. L.V. Pissizhenskogo akad. Nauk. USSR,  
Pres. akad. A. N. Terezhnikov.

AUTHORS: Butsko, S.S. and Dain, B.Ya. SOV/21-58-11-16/28

TITLE: Photochemical Reaction of a-Chlorophyll Oxidation by Ferric Chloride (Fotokhimicheskaya reaktsiya okisleniya khlorofilla a khlornym zhelezom)

PERIODICAL: Dopovidi Akademii nauk Ukrain'skoi RSR, 1958, Nr 11, pp 1221-1224 (USSR)

ABSTRACT: The irradiation with light of 400 to 370 m wavelength of acetone solutions of the mixtures of a-chlorophyll with  $\text{FeCl}_3$ , with an excess of the latter, leads to the formation of a red-colored photoproduct. This product is stable under vacuum conditions and preserves its characteristic spectrum for a long time. However, its contact with the air results in a sharp change of the spectrum. The spectrum of the final product is characteristic for ferric porphyrins (the position of peaks at 640; 580; 510 and 420 m ). The rate of photo-reaction decreases with an increase in ferric salt concentration. A dark after-effect of the light is observed in the reaction. This indicates the formation in the course of the photochemical reaction of stable products which act as catalyzers during the subsequent process in darkness.

Card 1/2 The authors assume that the red photoproduct is a chlorophyll

SOV/21-58-11-16/28

Photochemical Reaction of  $\alpha$ -Chlorophyll Oxidation by Ferric Chloride

semi-oxidized in the 7 - 8 position of the IV ring.  
There are 2 graphs and 3 references, 2 of which are Soviet  
and 1 American.

ASSOCIATION: Institut fizicheskiy khimii imeni L.V. Pisarzhevskogo AN  
UkrSSR (Institute of Physical Chemistry imeni L.V. Pisar-  
zhevskiy of the AS UkrSSR)

PRESENTED: By Member of the AS UkrSSR, A.I. Brodskiy

SUBMITTED: June 13, 1958

Note: Russian title and Russian names of individuals and institu-  
tions appearing in this article have been used in the trans-  
literation.

Card 2/2

BUTSKO, S.S.; DAIN, B.Y.

Spectrophotometric analysis of chlorophyll interactions with iron.  
Zhur.ob.khim. 28 no.9:2603-2611 S '58. (MIRA 11:11)

1. Institut fizicheskoy khimii AN USSR.  
(Chlorophyll) (Iron)

DAIN, B. Ya.

5(3)

AUTHORS:

Glikman, T. S., Podlinyayeva, M. Ye., SOV/79-29-6-4/72  
Dain, B. Ya.

TITLE:

Spectrophotometric Investigation of Reversible and Irreversible Conversions of Sulfophthalocyanine of Iron (III) in Aqueous Solution (Spektrofotometricheskoye issledovaniye obratimyykh i neobratimyykh prevrashcheniy sul'foftalotsianina zheleza (III) v vodnom rastvore)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 1785-1793 (USSR)

ABSTRACT:

The phthalocyanines belong to the small number of dyes which resemble, as to their structure, the natural pigments of the porphyrin class. In that connection many scientists tried to use these compounds as model of these pigments (Ref 1) in order to investigate more thoroughly the compounds of this kind if they are not combined with proteins. In this regard the iron phthalocyanines were of special interest; they are closely related with the hemins the part of which in the biological redox processes is well-known. The sulfonated derivatives of these dyes which are readily soluble in water show a number of interesting peculiarities which are based

Card 1/3



Spectrophotometric Investigation of Reversible and SOV/79-29-6-4/72  
Irreversible Conversions of Sulfophthalocyanine of Iron (III) in Aqueous  
Solution

on the fact, that they are capable of reversible and irreversible reactions in the dark and especially in the light. Since the solutions of the sulfonated derivatives of the iron-phthalocyanine are intensely colored the spectrophotometric method is most suitable for their investigation. In this paper the results of this spectrophotometric investigation of aqueous solutions of these compounds, and of the conversions taking place in them are described. It was found that the aqueous solutions of the ferri-sulfo-phthalocyanine (III) represent systems in the state of a hydrolytic equilibrium. The hydroxide of the ferri-phthalocyanine (III) which is formed on hydrolysis is unstable and decomposes slowly and yields ferro-sulfophthalocyanine (II) and the free hydroxyl. Exposure to light accelerates this process. The formation of free radicals on standing of the solutions of ferri-sulfo-phthalocyanine (III) which had been outgassed in the vacuum was confirmed by introduction of polymerization chains. The spontaneous decomposition of the hydroxide is the cause of the ~~1800~~ behavior of the aqueous solutions

Card 2/3

Spectrophotometric Investigation of Reversible and Irreversible Conversions of Sulfophthalocyanine of Iron (III) in Aqueous Solution

SOV/79-29-6-4/72

of sulfophthalocyanine of the trivalent iron and the cause of their slow decolorization in the air. There are 6 figures and 12 references, 3 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk Ukrainskoy SSR  
(Institute of Physical Chemistry of the Academy of Sciences, Ukrainskaya SSR)

SUBMITTED: May 12, 1958

Card 3/3

DAIN, B. Ya. (Prof.)(USSR)

"Photochemistry of Me-complexes of Chlorophyll."

report to be submitted for the Photosynthesis Symposium, 5th Intl. Congress of  
Biochemistry, Moscow, 10-16 Aug 1961.

KRYUKOV, A.I.; DAIN, B.Ya.

Photochemical reduction of ferric chloride in aromatic hydrocarbons.  
Dokl.AN SSSR 138 no.1:153-155 My-Je '61. (MIRA 14:4)

1. Institut fizicheskoy khimii im. L.V.Pisarzhevskogo AN USSR.  
Predstavleno akademikom A.N.Tereninym.

(Iron chloride)

(Photochemistry)